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My name is Dr. Patricia Greenfield. I am a developmental psychologist and Professor in the Department of Psychology at UCLA. I currently direct the UCLA Children's Digital Media Center, under a grant from the National Science Foundation. I am a member of the National Academy of Sciences' Board on Children, Youth, and Families, and I participated in their Workshop on Nontechnical Strategies to Reduce Children's Exposure to Inappropriate Material on the Internet. It is an honor to talk with you today about pornography on peer-to-peer file sharing networks, as they relate to child development and families.

Overview

My remarks this morning will focus on three questions. I begin with these questions and with a summary of my answers:

1. What does pornography on peer-to-peer filesharing programs (and elsewhere) mean to children and their development?

In sum, the evidence indicates that pornography and related sexual media can influence sexual violence, sexual attitudes, moral values, and sexual activity of children and youth.

2. What are the challenges parents face in reducing their children's access to pornography on peer-to-peer networks and elsewhere?

In sum, peer-to-peer file sharing networks are extremely popular with young people. They are part of an all-pervasive sexualized media environment. This total environment, including filesharing networks, leads to a tremendous amount of inadvertent and unintentional

exposure of children and young people to pornography and other adult sexual media. Peer-to-peer networks and the Internet differ from other sexualized media in that young people construct important components of this sexualized environment themselves.

3. What are the nontechnical means parents can use to deal with these challenges?

A warm and communicative parent-child relationship is the most important factor. In addition, open parent-child channels for communicating about sexual and media experiences, sex education at home or school, and parental participation with children on the Internet are constructive influences. Finally, for boys already at risk for antisocial behavior, parents should carefully monitor and severely limit access to pornography on filesharing networks and elsewhere.

File Sharing, Pornography, Child Development, and Family Issues in Detail

Question 1. What does pornography on peer-to-peer file sharing networks (and elsewhere) mean for children and their development?

A. Consumption of sexual media is related to the sexual activity and attitudes of adolescents. (This applies not just to pornography but to other types of files that are circulated on peer-to-peer file sharing networks.)

i. A number of surveys, from junior high to college, indicate that exposure to MTV (very common files on peer-to-peer networks) and R-rated films are correlated with premarital sexual permissiveness (Malamuth & Impett, 2001). Experimental studies confirm that exposure to music videos such as those seen on MTV can actually liberalize attitudes toward premarital sex, and this is particularly true for girls (Malamuth & Impett, 2001).

ii. In a field experiment, college students viewed R-rated films suggesting positive effects of sexual aggression (e.g., the sexual arousal of the victim). Viewing this type of film

made male students significantly more accepting of the use of aggression against women in sexual and nonsexual interactions (Malamuth & Check, 1981). This finding concerning R-rated films is relevant to file sharing networks because violent pornography, found on these networks, also shares these characteristics.

iii. Video portrayals of sexual relations between unmarried partners – an all-pervasive characteristic of pornography – affected 13- and 14-year-olds' moral judgments concerning premarital and extramarital sex: their judgments became more accepting after viewing video portrayals of sexual relations between unmarried partners. In contrast, video portrayals of sex between married individuals had no effect on moral judgments (Bryant & Rockwell, 1994). There was, however, no "spillover" effect of viewing sexual relations between unmarried partners into nonsexual areas of moral judgment, such as judgments concerning criminal or antisocial behavior.

B. Pornography has an adverse effect on older adolescent boys and young men already at high-risk for aggressive behavior.

High risk factors include impulsivity, hostility to women, and promiscuity. In this group, very frequent use of pornography is associated with a much higher rate of sexual aggression than found in youth of the same risk level who use pornography somewhat, seldom, or never (Malamuth, Addison, & Koss, 2000).

C. Memories of impactful sexual media from childhood and adolescence are overwhelmingly negative.

College students were asked to recall one impactful sexual media experience from their earlier lives and their responses to it; the most common emotional responses to the sexual film or video they recalled were disgust (24.5%), shock or surprise (23.6%), and embarrassment (21.4%)

(Cantor, Mares, & Hyde, 2001). Other negative emotional responses were anger (18.4%), fear (11.2%), sadness (9.2%). Only two positive emotions were mentioned (interest and happiness or pleasure) and these were mentioned by only a small minority of respondents.

In terms of physical (as opposed to emotional) reactions, sexual arousal was mentioned by fewer than 17% of the participants. There seems to be no reason not to extrapolate a low rate of sexual response to pornography on peer-to-peer networks, especially when the exposure is inadvertent (very frequent, as we shall see in the next section).

Responses differed according to the age at which the recalled sexual medium had been experienced. When experienced at age 12 or younger, embarrassment, fear of being caught, guilt, and confusion were significantly more common than when experienced at age 13 or older. Learning about biology and sex behaviors were also significantly more common in the earlier rather than later memories. On the other hand, the reactions of nausea, crying, disgust, anger, and sadness were more common for recalled media experiences that had taken place at age 13 or older. Where there were significant gender differences, positive or neutral memories were more common for males than for females (nudity, arousal, interest), whereas negative or neutral memories were significantly more common for females (dialog, rape, crying, and sadness). We must conclude that sexual media, including pornography, have different meanings and impacts on girls and boys.

Although in the minority, effects were sometimes enduring. Here the effects were most frequently neutral, followed by negative effects such as confusion (9.7%) and unwanted recurring thoughts (7.7%). Reduced eagerness to have sex was mentioned by 6.1% of respondents. This could be considered to be either positive or negative, depending on one's moral perspective and the age or situation (e.g., married, unmarried) of the respondent. A small

minority (4.1%) mentioned learning about biology, sexual risks, or sex behaviors from the impactful sexual medium they remembered. For a slightly larger percentage (5.1%), the recalled impactful media experience reinforced moral beliefs or made them aware of sex without love. (A given media experience could have more than one subjective impact.)

In sum, exposure to impactful sexual media up through the college years was overwhelmingly negative with a fairly low rate of recalled sexual response. Effects differed by gender, with girls experiencing more negative effects and boys experiencing more positive effects. Effects were sometimes longlasting. Extrapolating from these findings, we can infer that the memories of impactful sexual media of current college students would, on the one hand include the Internet, including peer-to-peer filesharing, and, on the other hand, be overwhelmingly negative, especially for girls, with some enduring effects and a relatively low rate of sexual response.

2. What are the challenges parents face in reducing their children's access to pornography on peer-to-peer networks and elsewhere?

A. Filesharing programs, originally developed for music, were, as of the end of 1999 and the beginning of 2000, the most popular use of the Internet for preteens (seventh graders) and teens (tenth graders) (Gross, Juvonen, & Gable, in preparation).

In a somewhat ethnically diverse sample of middle- to upper-middle SES population, 91% of participants reported at least some Internet use at home. In the total sample, participants reported downloading music an average of 32 minutes a day. These are the same peer-to-peer networks that contain pornography and other materials.

B. The presence of pornography on filesharing programs is continuous with what is available and consumed on other media.

Availability. As early as 1992, the most popular prime time shows with children and adolescents stressed physical appearance for women and scoring for men (Ward, 1995). The former value at very least has now permeated our culture (L. Greenfield, 1993). Similarly, in pornography, most of the emphasis is on physical attributes, with no depiction of emotional or relational elements (Malamuth & Impett, 2001). "Most commonly the portrayals are of female nudity and of men having sex with numerous, easily accessible young women" (Malamuth, 2001).

Consumption. This type of visual material is consumed primarily by males. In contrast, romance novels, a purely verbal form of sexual media, are consumed primarily by females.

Perhaps most pertinent to the issue of pornographic filesharing in peer-to-peer networks on the Internet is the rate of consumption of other pornographic media by children and youth. In a study of R- and X-rated media in the early 1980s, Bryant (1985) found that, by age 15, 92% of males and 84% of females had looked at or read *Playboy* or *Playgirl.* By 18, the proportion had risen to 100% for males and 97% for females. The average age of first exposure was reported to be 11 for males and 13 for females. Similarly, 92% of thirteen to fifteen year-olds had said that they had already seen an X-rated film; the average reported age of first exposure was 14 years 8 months.

It is possible however that the Internet (apart from peer-to-peer file sharing) is lowering the age of first exposure to such material. In a survey published in 1998, 48% of third- through eighth graders reported having visited Internet sites with various types of

"adult" content. Sexual sites were the most popular of the adult Internet sites (Kahn-Egan, 1998).

C. Inadvertent or unintentional exposure of children and teens is an issue in file sharing networks and other sexual media.

We know from the Govennment Reform report presented this morning that inadvertent exposure to pornography on peer-to-peer filesharing networks is a problem. However, it is a problem that is not restricted to peer-to-peer networks or even to the Internet. Indeed, inadvertent or unintentional exposure to sexual material is a general challenge for parents in today's media environment.

When over 200 college students were asked to recall an instance of sexual media content that had a strong effect on them, almost 85% reported on a movie whose rating (R, X, or NC-17) suggested that they were, at the time, too young to see it. Considering the total sample of recalled media content, only a small minority (29.1%) had actively sought to view it themselves. "The most common scenario was that the respondent watched the program or movie because someone else wanted to watch it (40.8%), but almost a third (30.1%) said they just happened to stumble upon the material" (Cantor, Mares, & Hyde, 2001, p. 19). When the impactful sexual medium experience occurred at age 12 or less, it was usually because someone else was watching it. When it occurred at age 13 or older, the respondent usually either sought it out or inadvertently stumbled into it.

As in peer-to-peer filesharing networks, peers were crucial intermediaries, albeit known rather than unknown peers. That is, most respondents reported viewing with someone else, most commonly a friend.

D. On peer-to-peer filesharing programs, banner ads provide a source of inadvertent exposure to sexuality.

For example, banner ads promote the sale of female condoms, male condoms (Figure 1), and introductions to potential sexual partners through personal ads (Figure 2). These are viewed as soon as you enter the program. They cannot be controlled by the user.

E. In peer-to-peer networks, pornographic files are not just passively consumed, advertently or inadvertently, by young people. Young people actively seek them out and make them available to others.

An important characteristic of these networks is that they are created by the users. Therefore, if a high proportion of users are teenagers, it is also the case that a high proportion of the distributors are also teenagers. That is, music videos and X-rated files have been downloaded and made available to others by the same young people who are consuming them. This is similar to teen chat rooms, where a high proportion of the talk is about sex, and this sexualized talk is created by the chatters themselves (Greenfield, 2000; Greenfield & Subrahmanyam, submitted for publication; Ianotta, ,2001).

Question 3. What are the nontechnical means parents can use to deal with these challenges?

A. Maintain an open family communication style.

With 13- and 14-year-olds, effects on moral judgments of sexual portrayals of non-marital sex on video (characteristic of pornography on peer-to-peer file sharing networks) were mitigated by an open family communication style (Bryant & Rockwell, 1994). Therefore, in today's media environment, an open communication style within the family is critical

B. Be open to discussing sex with your children.

People raised in families where sex is treated as taboo may be more susceptible to the influences of sexually explicit media than those reared in homes where sex is a permissible subject of conversation (Malamuth & Billings, 1985; Gunter, 2002). However,

C. Communicating about specific sexual topics is less important than developing and maintaining a warm and communjcative parent-child relationship.

A warm and communicative parent-child relationship reduces sexual risk-taking (Miller, Benson, & Galbraith, 2001).

D. Make sure that your child gets sex education.

People raised with little education about sexuality seem to be more vulnerable to influences of sexually explicit media than people raised with more education about sexuality (Gunter, 2002; bMalamuth & Billings, 1986).

E. Discuss media experiences witth your child.

In a study of thousands of high school students, girls who less frequently discussed media experiences with their parents had nearly twice the exual experience rate of those whose discussions were more frequent (Peterson, Moore, & Furstenberg, 1991).

F. Use the Internet (and other media) with your child.

Girls who watched television apart from their parents had more than three times the rate of sexual experiences as those who watched with their parents. Boys who watched television apart from their parents showed a significant correlation between viewing time and sexual experience; boys who watched with their parents did not. That is, co-viewing removed any impact of viewing time on sexual experience. This advice is based on a correlational study (Peterson, Moore, & Furstenberg, 1991), which cannot by itself prove a causal relationship between co-viewing and child effects. However, experimental research on nonsexual television

(which can prove causal relations) indicates that co-viewing with parents, who discuss the media content with the child, can indeed remove or mitigate negative impacts of antisocial television (Singer & Singer, 1986).

Using the Internet with one's child is facilitated by rules that limit Internet use when parents are not around, such as requiring the child to ask permission to use the Internet and limiting the number of hours the child can use the Internet. Such measures are already taken by more than 60% of parents with Internet access at home, more so with younger than older adolescents (UCLA Center for Communication Policy; Gross & Gable, 2002). These facts suggest something else that parents can do:

G. Put the computer in a public place in your home; if at all possible, do not let your child have a computer with internet access in his or her room.

This will help accomplish what about 90% of parents with Internet access report doing, keeping an eye on what children do with the Internet (Center for Communication Policy).

H. If you have a child with antisocial tendencies, restrict use of the Internet, including file sharing, to supervised sessions.

Restrict other access to pornography to the maximum possible. Frequent use of pornography by high risk males is associated with and seems to produce a large increase in sexual aggression (Malamuth, 1993). In general, strict rules are more effective than flexible ones (Gross, Juvonen, & Gable, in preparation). Nanny or filtering software, already used by about 32% of families with Internet access (UCLA Center for Communication Policy), can help in this effort, but filters are not perfect, as the Government Reform Committee report, also presented today, indicates.

Important Issues in Need of Future Research

Pornography on peer-to-peer file sharing networks is not unique, but is part of a highly sexualized media environment. By analogy to television and violence research, one likely developmental outcome of overexposure to sexual media is desensitization. Another outcome is the culture of the body, especially for females (L. Greenfield, 2002). But how does desensitization affect the emerging sexuality of young people? What are the psychological costs and benefits of this body culture? What is the role of other media in these processes?

Many other questions remain. What type of experiences are children and young people having with sexual material on peer-to-peer file sharing networks? What are the longterm effects of these experiences? How do parents view the challenges of the sexually-saturated media environment for child rearing and child development? What are the effects on children and families of various parental strategies vis-à-vis sexual and pornographic material on peer-to-peer networks and the Internet more generally? These are important questions greatly in need of more research and more research funding.

Summary

1. What does pornography on filesharing programs (and elsewhere) mean to children and their development?

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3. What are the nontechnical means parents can use to deal with these challenges? A warm and communicative parent-child relationship is the most important factor. In addition, open parent-child channels for communicating about sexual and media experiences, sex education at home or school, and parental participation with children on the Internet are constructive influences. Finally, for boys already at risk for antisocial behavior, parents should carefully monitor and severely limit access to pornography on filesharing networks and elsewhere.

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